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A STUDY OF THE EFFECTS OF MEDICAL WAIVERS AND THE T-41 FLYING T--ETC(U)  
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FRANK J. SEILER RESEARCH LABORATORY

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MAY 1979

A STUDY OF THE EFFECTS OF MEDICAL WAIVERS AND THE  
T-41 FLYING TRAINING PROGRAM AT THE ACADEMY ON  
UNDERGRADUATE FLYING TRAINING (UPT) PERFORMANCE  
OF AIR FORCE ACADEMY GRADUATES

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FINAL REPORT

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PROJECT 2304

AIR FORCE SYSTEMS COMMAND  
UNITED STATES AIR FORCE



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FJSRL-TR-79-0004

This document was prepared by the Applied Mathematics Division, Directorate of Aerospace-Mechanics Sciences, Frank J. Seiler Research Laboratory, United States Air Force Academy, Colorado. The research was conducted under Project Work Unit Number 2304-F1-65, Studies and Applications of Operations Research. Capt T. D. Baxter was the Project Engineer in charge of the work.


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This report has been reviewed by the Chief Scientist and is releasable to the National Technical Information Service (NTIS). At NTIS it will be available to the general public, including foreign nations.

This technical report has been reviewed and is approved for publication.

  
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) → A previous study, "Predicting Undergraduate Pilot Training (UPT) Performance for Air Force Academy Graduates," seemed to indicate that two factors impacting UPT performance were medical status and whether or not T-41 training was completed at the Air Force Academy. Since the original study considered only the Academy class of 1969, other classes needed to be examined to support or refute the findings. Thus, this study was undertaken for that purpose and available data from the classes of 1967 through 1976 were examined.		

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The data analysis of other classes support the findings for the class of 69. Some results based on combining as many classes as possible are as follows:

1. The leading cause given for UPT failure for Academy graduates was flying deficiency (50%), followed by self-initiated elimination (21%) and medical deficiency (17%). Seven other categories accounted for the other 12% of the failures.

2. For the group eventually going on to UPT, the number not having a pilot qualified (without waiver) medical status increases more than 2 1/2 times from entry to graduation from the Academy.

3. The UPT failure rate for those with medical waivers at Academy graduation was 45% higher than that for those who were medically pilot qualified (13.5% vs 9.3%).

4. The UPT failure rate for those who did not have T-41 training at the Academy was nearly twice that of those who did take T-41 training at the Academy (18.2% vs 9.6%).

5. The UPT failure rate for those with a medical waiver and no T-41 training at the Academy was over 2 1/2 times higher than those who were both pilot qualified and had T-41 training at the Academy (23.2% vs 8.8%).

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## INTRODUCTION

In July 1978 a technical report<sup>1</sup> entitled "Predicting Undergraduate Pilot Training (UPT) Performance for Air Force Academy Graduates" was published by the Frank J. Seiler Research Laboratory. That study examined the USAF Academy class of 1969 who went to pilot training. The purpose of the study was to determine what factors impact UPT success or failure and to what extent performance in UPT could be predicted. UPT class standing was used as the measure of merit for UPT performance. A number of cadet performance variables were used as predictors. The best combination of variables produced an  $R^2$  (multiple correlation squared) of only .34, thus explaining 34% of the variation. This study does not pursue improvement of that result. Rather, it pursues the findings for the class of 69: (1) that the UPT failure rates were significantly different for graduates who had T-41 flying training at the Academy and those who did not; (2) that the UPT failure rates were significantly different for those with a pilot qualified medical status and those who required a medical waiver. While the results for 69 were significant, it was felt that examination of other classes was necessary to substantiate (or refute) the findings.

## OBJECTIVE

The objective of this study was to analyze the effects of medical waivers and T-41 training at the Academy on success in UPT using as many Academy classes as possible for data.

## BACKGROUND ON PILOT TRAINING

Before getting into the study itself, a little background on the UPT program for Academy graduates is in order. The information was obtained

from Mr. Shircliffe in the ATC Historian office. The history is picked up in 1967 since that corresponds with the earliest Academy graduate data that were obtained. Table 1 shows the number of flying hours in each type aircraft at UPT through the years. T-41 flying hours remained the same from 1967 until 1970 when they were considerably reduced. A further reduction occurred for 71 and 72, and in 1973 training was eliminated for those who completed T-41 flying training while at the Academy or who had a private pilots license. T-41 training at the Academy began in 1968. In that year, since the program could not accommodate all who wanted to take T-41 training, a lottery was held to make a fair selection. In subsequent years T-41 training was generally available to all qualified cadets and included 30 hours flying time. Thus, until 1973 most Academy graduates received T-41 training both at the Academy and in UPT. Jet time in UPT varied in 1970-72, then went back to the 90 hours in T-37's and 120 hours in T-38's which continued through FY76.

#### DATA

The data for this study were extracted from the Education Research Data Base (ERDB) maintained by USAFA/RRY. It consisted of medical, T-41 training, and UPT information for USAF Academy graduates from 1967 through 1976. Since for some years the coding categories changed and for others some data had not been entered, the tables and figures will indicate the years on which the results are based.

Reasons for UPT failure are divided into ten categories. Table 2 shows the number of Academy graduates from each class 1967-1976 who went to UPT and the number who failed to complete UPT separated into the ten categories. Also shown are the percent failures in each category. In



addition, a summary of the combined data over the ten years is presented. Overall failure rates ranged from a low of 7.0% in 1976 to a high of 15.7% in 1972. The combined average over the ten years was 10.7%. Flying deficiency was by far the leading cause for failure in each year and accounted for nearly 50% of the failures overall. This was followed by self-initiated elimination and medical deficiency accounting for 21% and 17% respectively. All other reasons account for the remaining 12% of the failures.

#### EFFECT OF MEDICAL STATUS

Medical status is recorded in the Education Research Data Base (ERDB) at entry into the Academy and at graduation from the Academy. Throughout the entire period from 1967-1976, entry medical status was broken down into three categories: pilot qualified, navigator qualified, and commission qualified (waiver status is not considered at entry). From 1967-1972 medical status at graduation was recorded in six categories: pilot, pilot with waiver, navigator, navigator with waiver, commission, and commission with waiver. From 1973 to 1976 only three categories were recorded: pilot, navigator, and commission. Each of the three categories in the later years includes persons with waivers. Thus, after 1972 one cannot separate pilot qualified from pilot qualified with waiver using the ERDB. Table 3 shows numbers and failure rates for each medical category both at entry to and exit from the Academy for each year 1967 through 1976.

The year-by-year data are somewhat hard to work with because of relatively small numbers in some categories and fairly low failure rates. As one reviews this yearly data, however, the general pattern seems to be the better the medical qualification, the lower the failure rate.

Table 4 presents summary data. Several items here seem worth noting:

1. For the ten year period, about 1/5 of those who eventually went on to pilot training entered the Academy not medically pilot qualified (347 out of 4929).
2. The number requiring medical waivers for pilot training more than doubled (470 to 1248) from entry to graduation from the Academy reaching 46% at graduation for classes 1967-1972 combined. Comparable data for 1973-1976 were not obtained since pilot and pilot-with-waiver categories at graduation were combined for that period.
3. Differences in proportions of UPT failures between medically pilot qualified (10.4%) and not pilot qualified (12.2%) at entry were not significant at the .05 level for any of the summary groups, i.e., there is greater than a 5% probability that the proportions of failure are the same.
4. For the 1967-1972 summary group, the failure rate for those not pilot qualified at graduation was 32% higher than those who were pilot qualified (14.2% vs 10.8%).
5. Difference in proportion of UPT failures between medically pilot qualified (10.8%) and not pilot qualified (14.2%) at graduation were highly significant beyond the .01 level for the 1967-1972 group, i.e., there is less than a 1% probability the proportions of failures are the same. For the 1973-1976 group, the difference in proportion of failures for the pilot (including waived) and the non-pilot categories combined was also highly significant (.01 level of significance).

Table 5 shows failure rates for combinations of entry and graduation medical status. A somewhat counterintuitive result for 1967-1972 is that the group "not pilot qualified at entry and not pilot qualified at graduation" does not have the highest failure rate. The highest failure rate is for those who were pilot qualified at entry but needed a waiver by graduation. The same result holds for the 1973-1976 group where pilot in this case includes the pilot with waiver category at graduation. Also note that of the 2239 pilot qualified at entry for 1976-1972 group, 40% (889) needed a waiver by graduation. On the other hand, of 470 not qualified at entry, 24% (111) became pilot qualified by graduation. The net result was that 83% were pilot qualified at entry but only 54% at graduation.

Summarizing the medical data, findings indicate that while no significant difference was found in UPT success rates by medical status at entry to the Academy, there was a significant difference when graduation medical status was considered, especially when combined with entry medical status.

#### EFFECT OF T-41 TRAINING AT THE USAF ACADEMY

Prior to this study effort, no information was found that quantifies the effect of the T-41 training program at the USAF Academy on UPT performance. This study sheds some light on the potential benefit of the program. Probably the best test case was the class of 1968 where a lottery decided who received T-41 training at the Academy. Of course, in that year and through 1972, T-41 training was given in conjunction with UPT whether or not previous T-41 training was obtained. Thus, we may be seeing the effect of increased T-41 training. Table 6 shows numbers and failure rates for 1968 through 1975 excluding 1971 and 1972 for which data were unavailable. For 1968 the UPT failure rate for those without T-41 training at the Academy was over 2 1/2 times that of those with T-41 training at the Academy (19.2% vs 7.1%) based on 196 with T-41 and 240 without. In order to remove any medical bias, a run was made which selected only those who were pilot qualified. The comparison was even more dramatic: 6.1% failure rate for those with T-41 training at the Academy and 18.1% for those without. Group sizes were 132 and 116 respectively.

After 1968 the T-41 program was generally available to all who were medically qualified. Thus, from 1969 on most cadets who wanted to be pilots participated in the program. In 1973 and 1974 so few went to UPT without T-41 training at the Academy that the statistics for those years must be considered with caution. In fact, in 1974 the trend reversed and

the failure rate for those without T-41 training was lower than that for those with T-41 training. Note, however, that if only one more had failed UPT, the rate would have doubled from 7.1% to 14.2%. In other years the failure rate is substantially higher for those without T-41 training at the Academy.

Table 7 shows the results of combining over several years. For 73-75 combined, the difference (9.4% vs 12.5%) was not significant.\* This was a period where no T-41 training was given in UPT if it had been completed at the Academy. For other combinations of years, however, the differences are highly significant\*\* with the failure rate for those not having T-41 training about double the rate for those who had. This would seem to indicate that there was a benefit to having more hours of T-41 training but that there was not a significant difference between the group which had T-41 training at the Academy as opposed to those who got it elsewhere as long as flying hours were equal.

#### COMBINED EFFECTS

The Venn diagrams on the following page show the numbers for combinations of medical status at graduation and T-41 training status at the Academy. Note that about half of those who did not get T-41 training at the Academy had medical waivers.

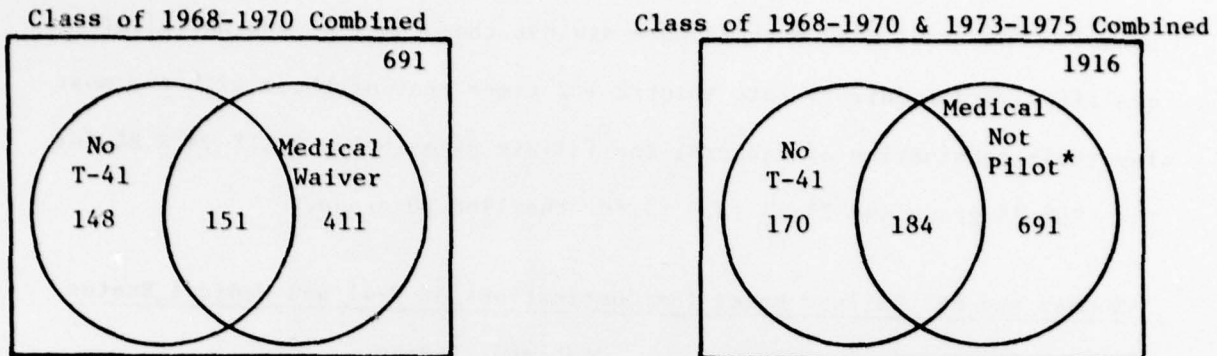
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\*.05 level of significance: less than 5% probability you would reject the hypothesis that the groups had the same failure rate when they were indeed the same.

\*\* .01 level of significance: less than 1% probability you would reject the hypothesis that the groups had the same failure rate when they were indeed the same.

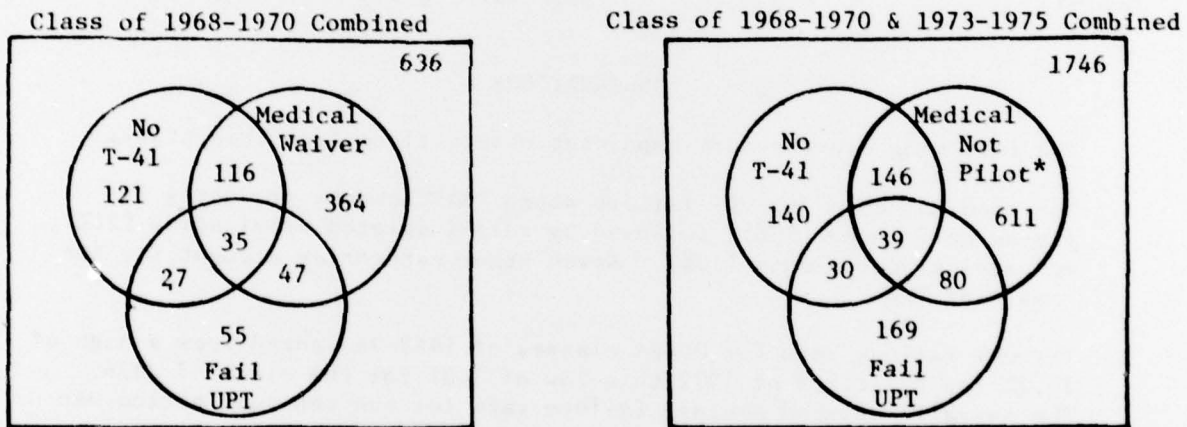


FIGURE 1  
OVERLAP OF NO T-41 TRAINING AND MEDICAL WAIVER AT GRADUATION



This next set of Venn diagrams show also the number who failed UPT. One can see from the diagrams that a reasonably good sample is obtained for each combination.

FIGURE 2  
OVERLAP OF NO T-41 TRAINING, MEDICAL WAIVER AT GRADUATION AND UPT FAILURE



The UPT failure rates for the various combinations are shown below. The results are as one might expect. No T-41 training at the Academy being the dominant factor produces a higher UPT failure rate for those pilot qualified than for those with T-41 training who were not pilot qualified

\*1968-1970 includes pilot qualified with waiver, 1973-1975 does not since pilot with waiver is not broken out in the data.

(17.6% vs 11.6% for the 1968-75 group and 18.2% vs 11.4% for the 1968-70 group). The group with both factors against them (no T-41 and not pilot qualified) had a failure rate about 2 1/2 times that of those with the most favorable combination of factors, the failure rates being 21.1% vs 8.8% for the 1968-75 group and 23.2% vs 8.8% for the 1968-70 group.

Number and UPT Failure Rates for Combinations of T-41 and Medical Status

<u>T-41</u>	<u>Medical</u>	<u>Combined 1968-70 + 1973-75</u>	<u>Combined 1968-70</u>
Yes	Pilot Qualified	169/1915 = 8.8%	61/691 = 8.8%
Yes	Not Pilot Qualified	80/691 = 11.6%	47/411 = 11.4%
No	Pilot Qualified	30/170 = 17.6%	27/148 = 18.2%
No	Not Pilot Qualified	39/185 = 21.1%	35/151 = 23.2%
Overall		318/2961 = 10.7%	170/1401 = 12.1%

OBSERVATIONS

The following are the more important observations from this study:

1. The leading cause for UPT failure among USAF Academy graduates is flying deficiency (50%), followed by self-initiated elimination (21%), and medical deficiency (17%). Seven other categories account for the remaining 12%.
2. The UPT failure rate for USAFA classes of 1967-76 ranged from a high of 15.7% for the class of 1972 to a low of 7.0% for the class of 1976. The overall, weighed average failure rate for the ten year period was 10.7%.
3. For the group who eventually go to UPT, the number medically not pilot qualified (without waiver) increases more than 2 1/2 times from entry to graduation from the Academy. At graduation, nearly half require a waiver to attend pilot training.
4. Medical status at entry to the Academy alone had little or no effect on eventual success or failure in UPT.
5. The UPT failure rate for those with medical waivers at Academy graduation was 45% higher than that for those who were pilot qualified (13.5% vs 9.3%).

6. Considering combinations of entry and graduation medical status, the highest risk was for those pilot qualified at entry but needing a medical waiver at graduation.
7. The UPT failure rate for those who did not have T-41 training at the Academy was nearly twice that of those who did (18.2% vs 9.6%). For the period 1973-76 alone, however, the difference was not found to be significant although the failure rate for those without was higher (12.5% vs 9.4%),. One might speculate that this is due to a small sample of those without (56 for combined 3 years) or that it is a result of not having the additional T-41 training in conjunction with UPT if the T-41 program was completed at the Academy. (Prior to 1973, 16 or more hours of T-41 training were given with UPT even if the program was taken at the Academy.) The latter reasoning would suggest that there is a benefit to having more hours of T-41 training or that the T-41 phase in UPT possibly allowed the Academy graduates a period of adjustment.
8. The UPT failure rate for those with a medical waiver and no T-41 training at the Academy was over 2 1/2 times that for those who were both pilot qualified and had T-41 training at the Academy (23.2% vs 8.8%).

The above observations point to the fact that T-41 training at the Academy and medical status at graduation from the Academy affect performance in UPT. They do not, however, provide a means of sure discrimination (failure or success in UPT) on an individual basis. They do identify a higher risk group which should be considered along with other factors should the Academy have to cut back dramatically on the number of graduates going on to UPT.

TABLE 1  
UNDERGRADUATE PILOT TRAINING FLYING HOURS FOR USAF ACADEMY GRADUATES

<u>FY</u>	<u>T-41 HOURS</u>	<u>T-37 HOURS</u>	<u>T-38 HOURS</u>	<u>TOTAL</u>
67	30	90	120	240
68	30	90	120	240
69	30	90	120	240
70	18	90	100	208
71	16	72	110	198
72	16	82.5	120	218.5
73*	X	90	120	210
74*	X	90	120	210
75*	X	90	120	210
76*	X	90	120	210

\*No T-41 training for Academy graduates if they received T-41 training while at the Academy or if they held a private pilot's license. Otherwise, they received 16 hours of T-41 training at Hondo AFB, TX prior to UPT.



**TABLE 2**  
**USAF ACADEMY GRADUATE UPT FAILURES**

Academy Class	Number by Category										TOTAL
	67	68	69	70	71	72	73	74	75	76	
Total in UPT Classes	313	436	477	488	499	496	506	531	523	660	4929
Total Fail	29	60	47	63	58	78	40	65	43	46	529
Flying Deficiency	24	35	14	28	29	27	13	47	22	23	262
SIE*	2	5	13	12	15	26	10	7	11	9	110
Medical Deficiency	0	12	13	14	4	14	12	6	6	9	89
MOA**	0	2	3	0	2	10	4	3	2	1	27
Other Reason	1	5	1	4	1	1	0	0	0	0	14
Other Fatality	2	1	1	1	6	0	1	0	0	1	13
Academic Deficiency	0	0	0	2	0	0	0	2	1	3	8
Fear of Flying	0	0	0	2	1	0	0	0	0	0	3
Training Fatality	0	0	2	0	0	0	0	0	0	0	2
Military Training Def	0	0	0	0	0	0	0	0	1	0	1

% of Total Failures											
Flying Deficiency	82.8	58.3	29.8	44.4	50.0	34.6	32.5	72.3	51.2	50.0	49.5
SIE*	6.9	8.3	27.7	19.0	25.9	33.3	25.0	17.5	25.6	19.6	20.8
Medical Deficiency	--	20.0	27.7	22.2	6.9	17.9	30.0	9.2	14.0	19.6	16.8
MOA**	--	3.3	6.4	--	3.4	12.8	10.0	4.6	4.7	2.2	5.1
Other Reason	3.4	8.3	2.1	6.3	1.7	1.3	--	--	--	--	2.6
Other Fatality	6.9	1.7	2.1	1.6	10.3	--	2.5	--	--	2.2	2.5
Academic Deficiency	--	--	--	3.2	--	--	--	3.1	2.3	6.5	1.5
Fear of Flying	--	--	--	3.2	1.7	--	--	--	--	--	0.6
Training Fatality	--	--	4.3	--	--	--	--	--	--	--	0.4
Military Training Def	--	--	--	--	--	--	--	--	2.3	--	0.2
Overall Class Failure Rate	9.3	13.8	9.9	12.9	11.6	15.7	7.9	12.2	8.3	7.0	10.7

\*Self-Initiated Elimination

\*\*Manifestation of Apprehension

TABLE 3  
NUMBER AND PERCENT UPT FAILURE BY MEDICAL STATUS  
AT ACADEMY ENTRY AND GRADUATION

1967											
	Medical Code Academy Entry				Medical Code Academy Graduation						
	Pilot	Nav	Comm	Total	Pilot	PilotW	Nav	NavW	Comm	CommW	Total
Pass UPT	183	31	70	284	167	110	0	4	3	0	284
Fail UPT	21	2	6	29	16	12	0	0	0	1	29
Total	204	33	76	313	183	122	0	4	3	1	313
Fail Rate	10.3%	6.1%	7.9%	9.3%	8.7%	9.8%	--	0%	0%	100%	9.3%

1968											
Pass UPT	304	30	42	376	219	137	0	13	7	0	376
Fail UPT	45	5	10	60	29	26	0	3	2	0	60
Total	349	35	52	436	248	163	0	16	9	0	436
Fail Rate	12.9%	14.3%	19.2%	13.8%	11.7%	16.0%	--	18.8%	22.2%	--	13.8%

1969											
Pass UPT	374	30	26	430	286	136	0	6	2	0	430
Fail UPT	37	8	2	47	22	22	0	2	1	0	47
Total	411	38	28	477	308	158	0	8	3	0	477
Fail Rate	9.0%	21.1%	7.1%	9.9%	7.1%	13.9%	--	25.0%	33.3%	--	9.9%

1970											
Pass UPT	381	26	18	425	246	167	1	6	2	3	425
Fail UPT	52	3	8	63	37	20	3	3	0	0	63
Total	433	29	26	488	283	187	4	9	2	3	488
Fail Rate	12.0%	10.3%	30.8%	12.9%	13.1%	10.7%	75.0%	33.3%	100%	100%	12.9%

1971											
Pass UPT	360	47	34	441	213	175	5	8	30	10	441
Fail UPT	55	2	1	58	29	25	0	0	0	4	58
Total	415	49	35	499	242	200	5	8	30	14	499
Fail Rate	13.3%	4.1%	2.9%	11.6%	12.0%	12.5%	0%	0%	0%	28.6%	11.6%

1972											
Pass UPT	364	34	20	418	172	238	0	2	1	5	418
Fail UPT	63	8	7	78	25	47	0	4	1	1	78
Total	427	42	27	496	197	285	0	6	2	6	496
Fail Rate	14.8%	19.0%	25.9%	15.7%	12.7%	16.5%	--	66.7%	50.0%	16.7%	15.7%

TABLE 3 (continued)

1973								
Medical Code Academy Entry					Medical Code Academy Graduation			
Pilot	Nav	Comm	Total		Pilot	Nav	Comm	Total
Pass UPT	392	47	27	466	365	12	89	466
Fail UPT	35	2	3	40	28	1	11	40
Total	427	49	30	506	393	13	100	506
Fail Rate	8.9%	4.1%	10.0%	7.9%	7.1%	7.7%	11.0%	7.9%

1974									
Pass UPT	389	47	30	466	365	9	92	466	
Fail UPT	54	7	4	65	51	5	9	65	
Total	433	54	34	531	416	14	101	531	
Fail Rate	12.2%	13.0%	11.8%	12.2%	12.3%	35.7%	8.9%	12.2%	

1975									
Pass UPT	406	57	17	480	405	58	17	480	
Fail UPT	32	7	4	43	32	7	4	43	
Total	438	64	21	523	436	65	21	522	
Fail Rate	7.3%	10.9%	19.0%	8.2%	7.3%	10.8%	19.0%	8.2%	

1976									
Pass UPT	503	62	49	614	505	60	49	614	
Fail UPT	32	7	7	46	32	7	7	46	
Total	535	69	56	660	537	67	56	660	
Fail Rate	6.0%	10.1%	12.5%	7.0%	6.0%	10.4%	12.5%	7.0%	

TABLE 4  
UPT PERFORMANCE BY MEDICAL STATUS

Class of 1967-1972 Combined										
	Medical Code Academy Entry			Medical Code Academy Graduation						Total
	Pilot	Nav	Comm	Pilot	Pilot Waiver	Nav	Nav Waiver	Comm	Comm Waiver	
Pass UPT	1966	198	210	1303	963	6	39	45	18	2374
Fail UPT	273	28	34	158	152	3	12	4	6	335
Total	2239	226	244	1461	1115	9	51	49	24	2709
Fail Rate	12.2%	12.4%	13.9%	10.8%	13.6%	33.3%	23.5%	8.2%	25.0%	12.4%

	Tot Waived for UPT			Tot Waived for UPT		
Pass UPT	408			1071		
Fail UPT	62			177		
Total	470			1248		
Fail Rate	13.2%			14.2%		

Class of 1973-1976 Combined							
	Medical Code Academy Entry			Medical Code Academy Graduation			Total
	Pilot	Nav	Comm	Pilot*	Nav	Comm	
Pass UPT	1690	213	123	1640	139	247	2025
Fail UPT	153	23	18	143	20	31	194
Total	1843	236	141	1783	159	278	2220
Fail Rate	8.3%	9.7%	12.8%	8.0%	12.6%	11.2%	8.7%

	Tot Waived for UPT		Tot Not Pilot	
Pass UPT	336		386	
Fail UPT	41		51	
Total	377		437	
Fail Rate	10.9%		11.7%	

Class of 1967-1976 Combined					
	Medical Code Academy Entry				Total
	Pilot	Nav	Comm	Nav + Comm	
Pass UPT	3656	411	333	744	4400
Fail UPT	426	51	52	103	529
Total	4082	462	385	847	4929
Fail Rate	10.4%	11.0%	13.5%	12.2%	10.7%

\*includes unknown number requiring waivers



TABLE 5  
UPT PERFORMANCE BY COMBINATIONS OF ENTRY AND  
GRADUATION MEDICAL STATUS

1967-1972 Combined

Medical Status	Entry	Pilot	Pilot	Waiver	Waiver	Total
	Graduation	Pilot	Waiver	Pilot	Waiver	
Pass Upt		1205	761	98	310	2374
Fail UPT		145	128	13	49	335
Total		1350	889	111	359	2709
Fail Rate		10.7%	14.4%	11.7%	13.6%	12.4%

1973-1976 Combined

Medical Status	Entry	Pilot	Pilot	Waiver	Waiver	Total
	Graduation	Pilot*	Not Pilot	Pilot*	Not Pilot	
Pass UPT		1555	135	85	251	2026
Fail UPT		134	19	9	32	194
Total		1689	154	94	283	2220
Fail Rate		7.9%	12.3%	9.6%	11.3%	8.7%

\*includes unknown number with waivers

TABLE 6  
UPT FAILURE RATES  
T-41 vs NO T-41  
AT THE USAF ACADEMY

		<u>T41</u>	<u>No T41</u>	<u>Total</u>
1968	Pass UPT	182	194	376
	Fail UPT	14	46	60
	Total	196	240	436
	Fail Rate	7.1%	19.2%	13.8%
1969	Pass UPT	407	23	430
	Fail UPT	41	6	47
	Total	448	29	477
	Fail Rate	9.2%	20.7%	9.9%
1970	Pass UPT	405	20	425
	Fail UPT	53	10	63
	Total	458	30	488
	Fail Rate	11.6%	33.3%	12.9%
1971 and 1972 no data				
1973	Pass UPT	457	9	466
	Fail UPT	39	1	40
	Total	496	10	506
	Fail Rate	7.9%	10.0%	7.9%
1974	Pass UPT	453	13	466
	Fail UPT	64	1	65
	Total	517	14	531
	Fail Rate	12.4%	7.1%	12.2%
1975	Pass UPT	453	27	480
	Fail UPT	38	5	43
	Total	491	32	523
	Fail Rate	7.7%	15.6%	8.2%

TABLE 7  
UPT FAILURE RATES  
T-41 vs NO T-41  
AT THE USAF ACADEMY

SUMMARY DATA

Combined 1973-1975

	<u>T41</u>	<u>No T41</u>	<u>Total</u>
Pass UPT	1363	49	1412
Fail UPT	141	7	148
Total	1504	56	1560
Fail Rate	9.4%	12.5%	9.5%

Combined 1969, 1970, 1973-1975

	<u>T41</u>	<u>No T41</u>	<u>Total</u>
Pass UPT	2175	92*	2267
Fail UPT	235	23	258
Total	2410	115	2525
Fail Rate	9.8%	20.0%	10.2%

Combined 1968-1970, 1973-1975

	<u>T41</u>	<u>No T41</u>	<u>Total</u>
Pass UPT	2357	266**	2623
Fail UPT	249	59	308
Total	2606	325	2931
Fail Rate	9.6%	18.2%	10.5%

\*includes 1 in 1969 and 10 in 1970 who took T-41 training but withdrew (all passed UPT)

\*\*includes 10 in 1968, 1 in 1969, and 10 in 1970 who took T-41 training but withdrew (all passed UPT)

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